

WHAT IS CLAIMED IS:

1. An image capturing apparatus comprising:
an image sensor in which a charge accumulating device is electrically
interposed between a substrate and a charge transfer path;
5 a switching element for switching a substrate voltage in order to control a
barrier voltage which is generated between said substrate and said charge accumulating
device; and
a controller for controlling said switching element so as to selectively inhibit
the switching of said substrate voltage at the time of image capturing in accordance with
10 an image capturing condition.
2. The image capturing apparatus according to claim 1, wherein
said image capturing condition includes a present status of an image capturing
mode of said image capturing apparatus.
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3. The image capturing apparatus according to claim 2, further comprising:
a taking lens; and
a driver for driving said taking lens to a focus position of a subject, wherein
said image capturing mode includes a first mode of continuing driving of said
20 taking lens by said driver also after a focus state is achieved on the subject, and
when said first mode is set, said controller inhibits switching of said substrate
voltage.
4. The image capturing apparatus according to claim 3, wherein
25 said image capturing mode further includes a second mode of stopping the

driving of said taking lens by said driver when the focus state is achieved on the subject,
and

when said second mode is set, said controller permits switching of said
substrate voltage.

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5. The image capturing apparatus according to claim 1, further comprising:
a discriminator for discriminating whether the subject is a moving subject or
not, wherein

when the subject is a moving subject, said controller inhibits switching of said
10 substrate voltage.

6. The image capturing apparatus according to claim 5, wherein
when the subject is not a moving subject, said controller permits switching of
said substrate voltage.

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7. The image capturing apparatus according to claim 1, further comprising:
an image processor for processing image data generated by said image sensor,
wherein

said image processor changes a process in accordance with a present status of
20 said substrate voltage.

8. The image capturing apparatus according to claim 7, wherein
said image processor changes a tone conversion characteristic for said image
data in accordance with the present status of said substrate voltage.

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9. A method of switching a substrate voltage in an image capturing apparatus including an image sensor in which a charge accumulating device is electrically interposed between a substrate and a charge transfer path and which can control a barrier voltage which is generated between said substrate and said charge accumulating device
5 by switching said substrate voltage, the method comprising the following steps of:
detecting an image capturing condition;
switching said substrate voltage at the time of image capturing when a first image capturing condition is detected; and
maintaining said substrate voltage at the time of image capturing when a second
10 image capturing condition is detected.
10. An image capturing apparatus comprising:
an image sensor in which a charge accumulating device is electrically interposed between a substrate and a charge transfer path;
15 a switching element capable of switching a substrate voltage to control a barrier voltage which is generated between said substrate and said charge accumulating device, wherein switching time required for an operation of switching said substrate voltage is variable; and
a controller for changing said switching time for image capturing in accordance
20 with an image capturing condition.
11. The image capturing apparatus according to claim 10, wherein
said image capturing condition includes exposure time of said image sensor.
- 25 12. The image capturing apparatus according to claim 11, wherein

said controller shortens said switching time as the exposure time of said image sensor is shortened.

13. A method of switching a substrate voltage in an image capturing
5 apparatus including an image sensor in which a charge accumulating device is electrically interposed between a substrate and a charge transfer path and of which barrier voltage which is generated between said substrate and said charge accumulating device is controllable by switching said substrate voltage, the method comprising the steps of:
- detecting an image capturing condition;
 - 10 switching said substrate voltage in first response time for image capturing when a first image capturing condition is detected; and
 - switching said substrate voltage in second response time for image capturing when a second image capturing condition is detected.
14. The method according to claim 13, wherein
15 said image capturing condition includes exposure time of said image sensor.
15. The method according to claim 14, wherein
exposure time in said first image capturing condition is shorter than exposure
20 time in said second image capturing condition, and
- said first response time is shorter than said second response time.